

ARTISAN ELECTRONICS CORPORATION



MANUFACTURERS OF
ELECTRONIC COMPONENTS AND EQUIPMENT

5 Eastmans Road, Parsippany, N. J.

Timing Tips

New Concepts in Industrial & Military
Electronic Timer Applications

VOL. 1/NO. 3

MODEL 420 — SOLID STATE AC FLASHER

Operating Voltage: 105-130VAC, 60 cps.

Output Switch Rating: Solid state switch, switching full 360 degree AC voltage rated at 100VA inductive with a maximum 1 cycle surge to 500VA.

Flashing Rate: 50% duty cycle ("ON" time and "OFF" time are equal) from 70 milliseconds to 360 seconds.

Flashing Repeatability: $\pm 1\%$.

Operating Temperature: -10°C to $+71^{\circ}\text{C}$.

Storage Temperature: -55°C to $+110^{\circ}\text{C}$.

Vibration: 10g's from 5 to 5000 cps.

Shock: 50g's for $11 \pm 1\text{ms}$.

Acceleration: 10g's any axis.

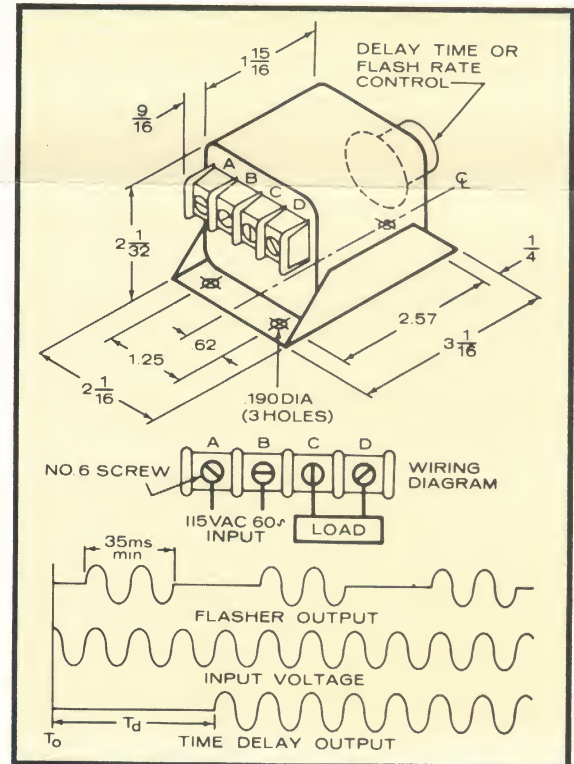
Altitude: Sea level to 50,000 feet.

Dielectric Strength: 500V-rms between all terminals and case and across open relay contacts.

Insulation Resistance at 500VDC: 250 megohms.

Ordering Information — Model 420.

The Model 420 flasher module must carry as a dash number the minimum "ON" time of the 50 per cent duty cycle flashing period. The maximum adjustable will then be 100 times this minimum specified period. As a minimum obtainable flash rate for the Model 420, 35 milliseconds is specified, with the maximum specified at 180 seconds.



MODEL 421 — SOLID STATE AC DELAY MODULE

Operating Voltage: 105-130VAC, 60 cps.

Output Switch Rating: Solid state switch, switching full 360 degree AC voltage rated at 100VA inductive with a maximum 1 cycle surge to 500VA.

Time Delay Range: Delay on turn-on from 100 milliseconds to 180 seconds.

Timing Repeatability: $+1\%$, -2% .

Operating Temperature: -10° to $+71^{\circ}\text{C}$.

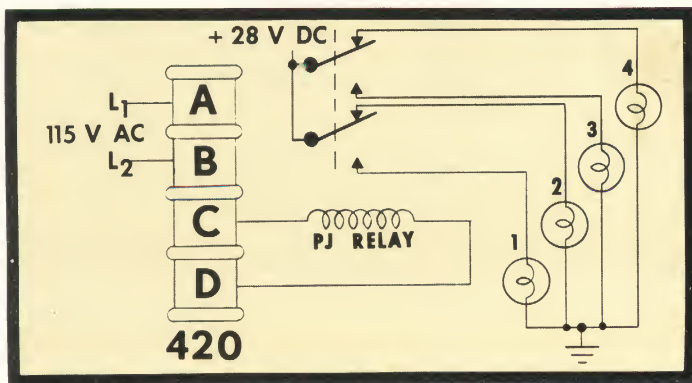
Environmental: Same as the Model 420.

Ordering Information — Model 421.

For the Model 421 time delay module, the minimum desired time delay must be specified as a dash number to the basic part number. This will automatically yield an adjustable timing range from the minimum specified to 100 times the minimum time specified, with a maximum of 180 seconds as the upper limit and a minimum low limit of 100 milliseconds.



APPLICATION NO. 1

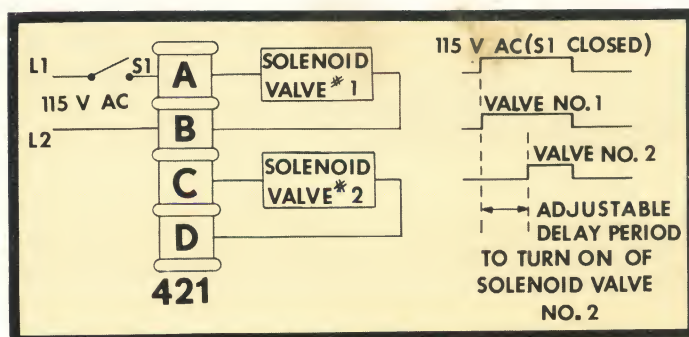


Ground support equipment, trainers and simulators require high-powered flashing buses. This application shows a Model 420 flasher operating an Artisan PJ relay. The contacts of which are connected to a 28VDC supply. When de-energized, lamp banks 2 and 4 would be "ON". When energized, by the flasher during an "ON" cycle, lamp banks 1 and 3 would be "ON".

Each contact of the PJ relay is capable of carrying 15 amperes lamp load thereby giving a total of 60 amperes lamp load available for the flashing of the 28VDC lamps. In place of the 28VDC, any voltage within the rating of the PJ relay will create high-powered flashing buses.

The PJ relay required in this application would carry the Artisan part number PJ-115VAC.

APPLICATION NO. 2



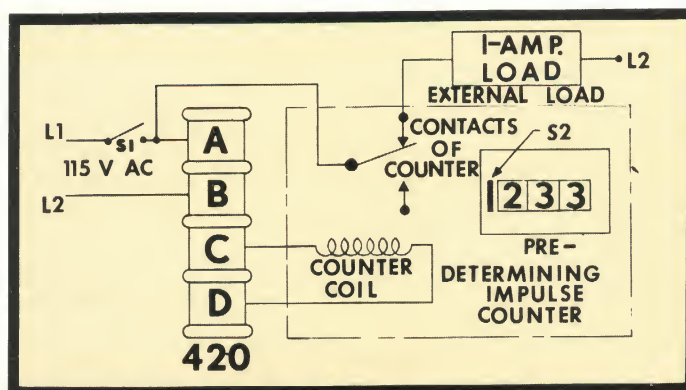
Timing of 115VAC solenoid valves.

The Model 421 is a solid state time delay device energizing the load connected across terminals C and D with 115VAC at the end of the preset delay period.

The Model 421 is available in delay times from 100 milliseconds to 3 minutes. When solenoid valves are connected as shown, the application of 115VAC through Switch S1 energizes the first solenoid valve and begins the preset delay period. At the end of the delay period, solenoid valve number 1 is maintained in an energized condition and solenoid valve number 2 is also energized. Both solenoid valves remain energized until Switch S1 is opened removing all power.

Re-application of Switch S1 will begin another timing cycle. Applications of this type are found in mixing equipment where the quantity and mixture of chemicals are controlled through solenoid valves externally operated.

The Model 421 being completely solid state will operate solenoid valves up to 100VA with inrush currents as high as 500VA.



APPLICATION NO. 3

The Model 420 Flasher is shown operating the counter coil of a predetermined impulse counter to act as a preset digital time delay relay. When connected as shown in the wiring diagram, the operation is as follows:

The Model 420 Solid State Flasher is set for a flashing rate of 1 pulse per second. The predetermined impulse counter, with a three digit capacity, will be used to indicate or count the pulses from 1 to 999. The preset delay period is digitally set into the predetermined impulse counter and Switch S1 is closed. With the contacts of the counter wired as shown, an external 1 amp AC load is immediately energized. The Model 420 Flasher begins delivering pulses to the impulse counter coil at the rate of 1 per second thereby changing the digital display in a descending order. When the counter accumulates the preset number of pulses, which because of the setting of the Model 420 Flasher is also equal to the time in seconds, the contacts of the counter energize removing voltage from the 1 amp load. The voltage is then removed from the load until the impulse counter is reset by the operation of Switch S2 which is a manual reset switch of the counter.

An application of this type assures a very accurate delay time as well as the ability of displaying the time remaining in seconds of the preset delay period.

Another application similar to that of no. 3 will energize a load after the preset delay time. The external load is connected to the normally open contact of the predetermined impulse counter thereby energizing the load after the preset time delay period as opposed to removing the voltage after the preset delay period.

With the external load connected to the normally open contact of the impulse counter, terminals A and B of the flasher may be connected to other control devices which would permit the operating voltage to be applied during the delay period as one sequence of operation and the operation of the counter contacts would then create a second sequence.

By changing the flashing rate of the Model 420, the predetermined impulse counter can be used to set up tenths of seconds or any discrete time within the limitations of the Model 420 flashing range.

Write for other "Timer Specifications" and your complimentary "Design Engineers Timing Handbook."
ARTISAN ELECTRONICS CORPORATION, 5 Eastmans Road, Parsippany, N.J. 07054